

REMARKS

Applicant responds hereby to the final Office Action mailed April 13, 2010, in this application.

The final Office Action withdraws independent method claim 33, objects to the drawings under 37 CFR 1.83(a) for use of the term "cup spring" (claims 32; 33), rejects claims 27-29 under 35 USC §112, second paragraph as indefinite, rejects claims 1-3, 10, 13, 17-20, 22, 23 and 26 under 35 USC §103(a) over Raines in view of Goris, rejects claims 4, 5, 6, 7, 8 and 25 under §103(a) over Raines in view of Trott, rejects claim 14 under §103(a) over Raines in view of Hutchins, rejects claims 15-16 under §103(a) over Raines in view of Jasch, rejects claim 24 under §103(a) over Raines, rejects claims 27-29 and 32 under §103(a) over Raines in view of Jasch further in view of Goris and still further in view of Hutchins, rejects claim 30 under §103(a) over Raines in view of US Patent No. 4,252,121 to Arnegger ("Arnegger") further in view of Goris and rejects claim 31 under §103(a) over Raines in view of Arnegger further in view of Goris still further in view of Jasch.

In response to the objection to the drawings under 37 CFR 1.83(a), applicant respectfully asserts that Figs. 1 and 2 show a platelike bearing flange 38, a fastening screw (42) and spring element (24). The Specification at page 5, lines 30-31, states that the device includes a platelike bearing flange 38, a fastening screw (42) and spring element (24) embodied as a cup spring. Applicant, therefore, respectfully asserts that the drawings comply fully with 37 CFR 1.83(a).

In response to the rejection of claims 27-29 under 35 USC §112, second paragraph, applicants amend independent claim 27 as shown above to set forth that the

more than eight form-locking elements comprise respective chamfers and that in a mounted state the spring element automatically deflects the tool past the respective chamfers.

Support for the amendment to claim 27 is found in Fig. 4 and at page 7, lines 16-20 of the Specification.

Applicants respectfully request withdrawal of the rejection of claims 27-29 under 35 USC §112, second paragraph, therefore.

In response to the art rejections, applicant amends independent claims 1, 18, 27 and 30 as shown above to make clear that the form-locking elements have a trapezoidal cross section that is perpendicular to drive shaft (16).

Support for the amendment of independent claims 1, 18, 27 and 30 is found in Figs. 3 and 4.

After amendment hereby, pending independent claims 1, 18, 27 and 30, and pending claims 2-8, 10, 13-20, 22 and 24-32, which depend therefrom, are patentable over Raines whether taken alone or in any combination with Goris, Trott, Hutchins, Jasch and Arnegger, for at least the following reasons.

Claims 1-3, 10, 13, 17-20, 22, 23 and 26

To support the rejection of claims 1 and 18, the Examiner asserts that modifying Raines to include twelve form-locking elements and the radial set-off or radius to the form-locking elements being 4 times rather than 2 times as large as the centering element radius are trivial under St. Regis and Aller, respectively, and that it would have

been obvious to have modified Raines' form-locking elements (84, 85) by Raines trapezoidal form-locking element 20 (Fig. 7).

Applicant respectfully disagrees and asserts with all due respect that the Examiner's argument that modifying Raines to include **twelve** form-locking elements would be a mere duplication of essential working parts does not take into account the subject matter of the inventions of independent claims 1 and 18 as a whole, particularly in view of the instant amendment clarifying that each of said twelve form-locking elements have a trapezoidal cross section, which is perpendicular to the drive shaft (16).

The twelve form-locking elements (12) on bearing flange (38), which have a trapezoidal cross section that is perpendicular to the drive shaft (16), together allow for twelve potential positions. Such configuration enables the hand-held power tool to be used universally in various positions with simultaneously more secure torque transmission (see the Specification at page 2, lines 28-32).

The twelve form-locking elements (12) on bearing flange (38), which have a trapezoidal cross section that is perpendicular to the drive shaft (16), together allow for twelve-fold rotational symmetry providing the device and tool both with triple symmetry and with quadruple symmetry. As such, the claimed configurations are useful for fastening, for example, a triangular grinding plate or a circular saw blade (see the Specification at page 3, lines 1-4).

Raines as distinguished discloses a universal attachment assembly for securing saw blades (16) to an actuator shaft (12) of an oscillating surgical saw (10). Blades (16) are held between a fixed receptor plate (14) on shaft (12) and a selected surface (82)

from which circular mounting bosses (84, 85) extend. The mounting bosses (84, 85) engage through apertures (44) of saw blade (16) with apertures (34) of receptor plate (14). A locking nut (20) is provided to hold the receptor plate (14) and the mounting disk (24) together and to secure the saw blade (16) between the receptor plate (14) and the mounting disk (24).

Moreover, Raines does not teach or suggest a radius of a form-locking element that is four times as large as a radius of a centering element, a requirement of each of claims 1 and 18. Such a claimed configuration provides a large space for the twelve form-locking elements such that a long lever for transmitting torque can be achieved with comparatively little material stress in the region of the form-locking element without losing precision in a centering operation (see the Specification at page 1, lines 31-35).

For that matter, Raines' mounting bosses or form-locking elements 84, 85 are configured with circular cross sections, where the twelve form-locking elements as claimed have a trapezoidal cross section perpendicular to the drive shaft, require by all of applicant's claims.

So while the Examiner asserts that Raines discloses the invention substantially as claimed except to at twelve form-locking elements and that it would have been obvious to have modified Raines by providing at least twelve form-locking elements for the purpose of increasing the degree of freedom of the blade because increasing the number of form-locking elements (essential working parts) involves only routine skill in the art, applicants again respectively disagree.

Raines was designed so that a saw blade is held between a fixed receptor plate (14) and profiled mounting disk (24) using three mounting bosses (84, 85), as can be

seen in Figs 3-5 and 11-14. In reviewing the figures, it does not appear that Raines could be modified to accommodate twelve form-locking elements (84, 85) (see surfaces 82 and 92, including apertures (86) and annular boss (96), respectively. That is, applicant does not see that Raines could be modified to accommodate 12 bosses evenly spaced at each $\pi/6$ radians about the circumference, or to allow for rotation about same angular positions, as claimed.

But even assuming that both the fixed receptor plate (14) and profiled mounting disk (24) could be modified to accommodate twelve form-locking elements (84, 85), such form-locking elements in and of themselves would not have trapezoidal cross sections perpendicular to the drive shaft, as claimed. And perhaps more importantly, such proposed modification would render the Raines unsatisfactory for its intended purpose (see In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984)), and/or at least change Raines' respective principles of operation (see In re Ratti, 123 USPQ 349 (CCPA 1959)), which in either case compels a legal conclusion that the proposed combinations cannot be obvious under the law; MPEP 2143.01.

Furthermore, while the Examiner further asserts that Raines discloses the invention substantially as claimed but for the quadrangular cross section/trapezoidal cross section, that Goris teaches the use of locking element 20 having a trapezoidal cross section, and that it would have been obvious to modify Raines by providing the trapezoidal cross section as taught by Goris, applicant again respectfully disagrees.

Goris's teaches a saw blade and device for clamping the saw blade. The device comprises seven form-locking elements that have a quadrangular cross section with a

trapezoidal side face, which seven form-locking elements are distributed over part of the circumference of the bearing flange.

Goris's locking elements 20 do not have a trapezoidal cross section, which is perpendicular to the drive shaft, as claimed. Nor does Goris teach or suggest twelve form-locking elements distributed uniformly over an annular range defined by the entire circumference of a bearing flange, or that a radius of twelve form-locking elements four times as large as the radius of the centering element.

Hence, the skilled artisan would not have considered modifying bosses or form-locking elements 84, 85 with Goris's locking element 20 because such modification would still not realize a boss or form-locking element with a trapezoidal cross section perpendicular to the drive shaft, still less twelve form-locking elements distributed uniformly over an annular range defined by the entire circumference of a bearing flange, as claimed, and it would not have been obvious to have modified Raines form-locking elements with the form-locking elements 20, as taught by Goris, or that such medication would realize the invention of amended independent claims 1 and 18.

For at least these reasons, claims 1-3, 10, 13, 17-20, 22, 23, 24 and 26 are patentable under 35 USC §103(a) over Raines, whether taken alone, or further in view of Goris, and applicant respectfully requests withdrawal of the rejection of the claims thereunder.

Claims 4, 5, 6, 7, 8 and 25

In response to the rejection of claims 4, 5, 6, 7, 8 and 25 under §103(a) over Raines in view of Trott, applicant respectfully asserts that Trott suffers the same

shortcomings of Raines and Goris, as set forth above in response to the rejection of amended independent claims 1 and 18 over Raines in view of Goris.

That is, while Trott may teach the use of pins (32) for connecting a blade in at least three or four rotary positions, the pins are rounded.

Nether Raines nor Trott teach or suggest at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) having a trapezoidal cross section perpendicular to the drive shaft, as required by claim 1 (as argued above), from which each of claims 4, 5, 7 and 8 depend.

Nor would it have been obvious to the skilled artisan to have modified Raines by the teachings of Trott to provide at least twelve rotary positions because such a modification would not realized the invention as set forth in claim 1 (as argued above), from which each of claims 6 and 25 depend.

Accordingly, applicant respectfully requests withdrawal of the rejection of claims 4-8 and 25 under 35 USC §103(a) over Raines in view of Trott.

Claim 14

In response to the rejection of claim 14 over Raines in view of Hutchins under 35 USC §103(a), applicant respectfully asserts that while Hutchins teaches the use of a chamfer to easily secure a blade, Hutchins nevertheless fails to overcome the

shortcomings of Raines as set forth above in response to the rejection of claim 1 over Raines.

Hutchins discloses a tool (10) that can be fastened to a device of a saw that is driven in an oscillating fashion. While Hutchins includes form-locking elements for engaging with offset slots (14) of tool (10), the form-locking elements have a rectangular cross section and in mounted state of the tool (10) the offset slots (14) only abut on contact points of the form-locking elements.

Neither Raines nor Hutchins teach or suggest offset slots having a trapezoidal cross section of form-locking elements of a device for fastening the tool (10), whereby in a mounted state each of the offset slots abut on at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) have a trapezoidal cross section that is perpendicular to the drive shaft, as set forth in claims 1 and 14.

Accordingly, applicant respectfully requests withdrawal of the rejection of claim 14 under 35 USC §103(a) over Raines in view of Hutchins.

Claims 15 and 16

In response to the rejection of claims 15 and 16 over Raines in view of Jasch under 35 USC §103(a), applicant respectfully asserts that while Jasch teaches the use of a spring element (98) for the purpose of preventing a release of a screw in operation,

Jasch nevertheless fails to overcome the shortcomings of Raines as set forth above in response to the rejection of claim 1 over Raines.

Neither Raines nor Jasch teach or suggest offset slots having a trapezoidal cross section of form-locking elements of a device for fastening the tool (10), whereby in a mounted state each of the offset slots abut on at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14) that are distributed uniformly over an angular range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) that have a trapezoidal cross section that is perpendicular to the drive shaft, as set forth in claims 1, 15 and 16.

Accordingly, applicant respectfully requests withdrawal of the rejection of claim 15 and 16 under 35 USC §103(a) over Raines in view of Jasch.

Claim 24

While the Examiner asserts that Raines discloses the invention as set forth in claim 1 but for twelve rotary positions that differ from each other by their adjacent rotary positions by 30 degrees, and it would have been obvious to modify Raines by providing twelve rotary positions that differ from each other by 30 degrees, applicant respectfully disagrees.

Raines does not disclose or suggest form-locking elements (e.g., form-locking element (34)), that have at least one slaving face that extends radially outward in an axial direction relative to an axis of the actuator shaft (12), twelve form-locking elements (34) located on receptor plate (14), which are distributed uniformly over an angular

range defined by an entire circumference of a circular bearing face of the receptor plate (14) or twelve form-locking elements (34) have a trapezoidal cross section that is perpendicular to the drive shaft, as claimed.

Accordingly, claims 24 is patentable over Raines under 35 USC §103(a), for at least these reasons, and applicant respectfully requests withdrawal of the rejection thereunder.

Claims 27, 29 and 32

As described above in response to the rejection of independent claims 1 and 18 over Raines in view of Goris, it would not have been obvious to have modified Raines by providing at least twelve rotary positions for the purpose of increasing the degree of freedom of the blade.

In addition, applicant respectfully asserts that it would not have been obvious to modify Raines by providing a radius associated with one position or said form-locking element that is eight times as large as a radius of said centering element as a mere discovery of an optimum value or workable range.

Hence, applicant respectfully disagrees that Raines may be said to disclose the invention substantially as claimed except for a spring element, that modifying Raines by the teaching of Jasch would realize the invention as set forth in amended independent claim 27, or that it would have been obvious to modify Raines in view of Jasch further in view of Goris still further in view of Hutchins.

Jasch discloses a device 20 for fastening a tool 50 with a spring element 98 for actuating tool 50 to bearing flange 22.

Goris's teaches a saw blade and device for clamping the saw blade. The device comprises seven form-locking elements that have a quadrangular cross section with a trapezoidal side face, which seven form-locking elements are distributed over part of the circumference of the bearing flange.

Goris's locking elements 20 do not have a trapezoidal cross section, which is perpendicular to the drive shaft, as claimed. Nor does Goris teach or suggest twelve form-locking elements distributed uniformly over an annular range defined by the entire circumference of a bearing flange, or that a radius of twelve form-locking elements four times as large as the radius of the centering element.

Hutchins discloses a tool (10) that can be fastened to a device of a saw that is driven in an oscillating fashion. While Hutchins includes form-locking elements for engaging with offset slots (14) of tool (10), the form-locking elements have a rectangular cross section and in amounted state of the tool (10) the offset slots (14) only abut on contact points of the form-locking elements.

None of Raines, Jasch, Goris or Hutchins teach or suggest neither more than eight form-locking elements nor a radius of the form-locking elements that is four times as large as the radius of the centering element, nor form-locking elements that have a trapezoidal cross section that is perpendicular to the drive shaft.

Accordingly, amended independent claim 27, claims 28, 29 and claim 32, which depend from claim 27, are patentable over Raines in view of Jasch and further in view of Goris and still further in view of Hutchins under 35 USC §103(a), and applicant respectfully requests withdrawal of the rejections thereunder.

Claim 30

Raines, as described in detail above, fails to disclose or suggest the structural elements as claimed, nor the intended functioning and respective advantages of same. Arnegger suffers the same shortcomings of Raines.

Arnegger discloses a tool 55 comprising a first tool part 51 and a second tool part 50 that is parallel to the first tool part 51. First tool part 51 and second tool part 50 are connected via an inclined section 52.

Arnegger fails to teach or suggest form-locking elements provided that correspond to a trapezoidal cross section that is perpendicular to a drive shaft, which form-locking elements are distributed uniformly over an annular range defined by an entire circumference of a circular face of a fastening portion.

Goris's teaches a saw blade and device for clamping the saw blade. The device comprises seven form-locking elements that have a quadrangular cross section with a trapezoidal side face, which seven form-locking elements are distributed over part of the circumference of the bearing flange.

Goris's locking elements 20 do not have a trapezoidal cross section, which is perpendicular to the drive shaft, as claimed. Nor does Goris teach or suggest twelve form-locking elements distributed uniformly over an annular range defined by the entire circumference of a bearing flange, or that a radius of twelve form-locking elements four times as large as the radius of the centering element.

Hence, neither Raines, Arnegger nor Goris teach or suggest a tool with a centering element and form-locking elements, having a quadrangular cross section that corresponds to a trapezoidal cross section that is perpendicular to a drive shaft (16), in

a first tool part, where the first tool part is arranged in parallel to a second tool part and which second tool part is connected to the first tool part via an inclined section, as claimed.

Accordingly, amended independent claim 30 is patentable over Raines in view of Arnegger further in view of Goris under 35 USC §103(a), and applicant respectfully requests withdrawal of the rejections thereunder.

Claim 31

While the Examiner asserts that Raines discloses the invention substantially as claimed except for the spring element, applicant respectfully disagrees. Raines, as described in detail above, fails to disclose or suggest the structural elements as claimed, nor the intended functioning and respective advantages of same.

So while the Examiner further asserts that Jasch teaches the use of a spring element 98 and that it would have been obvious to have modified Raines modified by Arnegger modified by Goris with the Jasch spring element to realize the invention of claim 31, applicant further respectfully disagrees.

Claim 31 depends from claim 30. Combining Jasch's spring element 98 would not have been obvious because Jasch suffers the same limitations of Raines alone, and Raines as proposed to be modified by Arnegger and Goris, as set forth above in response to the rejection of claim 30 under §103(a) over Raines in view of Arnegger further in view of Goris.

Claim 31, therefore, is not obvious over Raines in view of Arnegger further in view of Goris and still further in view of Jasch under 35 USC §103(a), and applicant respectfully requests withdrawal of the rejections thereunder.

Accordingly, the application as amended is believed to be in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael J. Striker', is written over the typed name.

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